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end

an image sensor for recording an image of the surface, wherein the recorded image contains a position-coding pattern that identifies a position on the surface; and  
a processor for converting the recorded image into a recorded position, wherein the recorded position is defined by two coordinate values, and  
the print head prints indicia on the surface based on a comparison of the recorded position with the graphical information to be printed.

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4. (Amended) The apparatus of claim 3, wherein  
said processor receives graphic information and converts the received graphic information into the plurality of graphics positions.

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18. (Unamended) The apparatus of claim 17, wherein the nozzle dispenses dye in a plurality of directions.

19. (Unamended) The apparatus of claim 1, wherein the print head comprises a heater that prints the indicia by heating the surface.

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cont'd

20. (Amended) A system for printing graphic information on a surface having a position-coding pattern thereon, wherein an arbitrary subset of the position coding pattern defines a coordinate position on the surface, the system comprising:  
a print head for printing indicia on the surface; and  
an image sensor for recording an image of the surface,

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wherein the print head prints indicia on the surface based on a comparison of the graphic information with the coordinate position defined by a position-coding pattern in the recorded image, the coordinate position being defined by two coordinate values.

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21. (Unamended) The system of claim 20, further including a processor for determining a speed of the print head in relation to the surface, and wherein the processor terminates printing by the print head when the speed is changing in an amount greater than a predetermined acceleration threshold value.

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22. (Amended) A method for printing graphic information on a surface, comprising:

accessing graphical information to be printed on the surface;

recording an image of the surface; and

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printing indicia on the surface based on a comparison of a recorded position derived from the recorded image and the graphic information, wherein the recorded position is defined by two coordinate values.

23. (Amended) An apparatus for printing graphical information on a surface, the apparatus comprising:

a nozzle for dispensing dye on the surface;

an image sensor for recording an image of the surface, wherein the recorded image contains a position-coding pattern that codes a position on the surface; and

a processor for converting the recorded image into a recorded position, wherein the processor determines a predicted position of the nozzle based on the recorded position, wherein the nozzle dispenses dye on the surface when the predicted position corresponds to a graphics position in the graphical information, and wherein the recorded position is defined by two coordinate values.

24. (Amended) An apparatus for printing graphical information on a surface, the apparatus comprising:

a print head for printing indicia on the surface;

an image sensor for recording an image of the surface, wherein the recorded image contains a position-coding pattern that codes a position on the surface; and

a processor for converting the recorded image into a recorded position, wherein the processor determines a predicted position of the print head based on the recorded position, wherein the print head prints the indicia on the surface when the predicted position corresponds to a graphics position in the graphical information, and wherein the recorded position is defined by two coordinate values.

25. (Amended) A system for printing graphical information, comprising:

a printing surface having a position-coding pattern thereon, wherein an arbitrary subset, having a predetermined size, of the position-coding pattern identifies a unique position on the printing surface, the unique position being defined by two coordinate values; and

a printing unit for printing the graphic information on the printing surface, wherein the printing unit further includes:

a print head for printing indicia on the printing surface; and

an image sensor for recording an image of the arbitrary subset on the printing surface,

wherein the print head prints indicia on the surface based on a comparison of the identified unique position on the printing surface with the graphical information to be printed.

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26. (Unamended) The system of claim 25, further including a processor for determining a speed of the print head in relation to the surface, and wherein the processor terminates printing by the print head when the speed is changing in an amount greater than a predetermined acceleration threshold value.

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27. (Amended) A hand-held printing device configured to print as the device is moved over a surface upon which is recorded a pattern, the hand-held printing device comprising:

a housing configured to be held by a user;

a print head in the housing;

a sensor in the housing for reading the pattern;

a processor for determining, as the housing is moved over the surface, a location on the surface based on the pattern read by the sensor, and for causing the print head to print

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end based upon the determined location, wherein the determined location is defined by two coordinate values.

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